Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Innovation in the Broadcast Television	)	
Bands: Allocations, Channel Sharing and	)	ET Docket No. 10-235
Improvements to VHF	)	
	)	

COMMENTS OF HARRIS CORPORATION

March 18, 2011

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EXECUTIVE SUMMARY

Harris is supportive of the Commission's efforts to provide flexibility and recognize efficiencies across all frequency bands—both federal and non federal. However, efforts to permit for alternate uses in certain spectrum bands, such as the U/V Bands, should be pursued on a voluntary basis. Broadcasters should be viewed as an asset, not an obstacle to advancing the Commission's broadband goals.

Utilizing broadcasters' current spectrum allocations, broadcasters and manufacturers are in the process of rolling-out a number of new services and applications that will take advantage of broadcasters' digital capabilities and lay the groundwork for future innovation. New services and applications, such as Mobile DTV and non-real time filed based services, will provide broadcasters with new innovative and competitive ways for American's to receive free, local content. In order for these new services and applications to be realized, the Commission should not implement rules that inhibit broadcasters' current capabilities or prevent further technological innovation within the broadcast industry.

In response to the Commission's three primary proposals in the NPRM, Harris makes the following recommendations:

1. Adopting the Commission's revised Table of Allocations at this time may be premature without fully understanding what spectrum within the U/V Band—within specific geographic regions—will be reallocated for wireless use.
2. Any channel sharing paradigm should only be implemented on a voluntary basis. Any framework should provide broadcasters the maximum amount of flexibility in order to maintain their current level and area of service, and their ability to implement new services, such as Mobile DTV.

3. Harris supports the proposals set forth in the NPRM to reduce reception issues in the VHF band, however, the Commission must keep in mind that even by taking these steps there will continue to be general broadcast reception constraints using the VHF band unless more is done to understand increasing noise levels.

Broadcasters' service is unique because of its nationwide footprint, one-to-many delivery method, highly reliable infrastructure, and public interest obligations. Broadcasters' resources, both physical and spectral, should be viewed as an asset, not an obstacle, to advancing the Commission broadband goals. The Commission must establish rules that provide broadcasters adequate spectral resources that will enable broadcasters to compete in a wireless broadband ecosystem. Access to broadband and broadcast is not a mutually exclusive proposition. Both broadband and broadcast can simultaneously prosper.

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To: The Commission

COMMENTS OF HARRIS CORPORATION

Harris Corporation ("Harris") respectfully submits these comments in response to the Federal Communications Commission's ("Commission") Notice of Proposed Rulemaking ("NPRM")[1] seeking comment on the Commission's plans to permit alternate uses of a portion of the VHF and UHF frequency bands[2] ("U/V Bands"), which are currently used primarily for broadcast television services. Harris is supportive of the Commission's efforts to provide flexibility and recognize efficiencies across all frequency bands—both federal and non federal. However, efforts to permit for alternate uses in certain spectrum band, such as the U/V Bands, should be pursued on a voluntary basis. In particular, the Commission should not create flexibility in the U/V Bands at the detriment of incumbent broadcasters' existing services (such as high definition television ("HDTV")), current service deployments (such as Mobile Digital Television ("DTV")), and future services (such as non-real time filed based delivery services).

[1] Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF, *Notice of Proposed Rulemaking*, ET Docket No. 10-235, FCC 10-196 (rel. Nov. 30, 2010).

[2] The broadcast spectrum bands consist of the low VHF spectrum at 54-72 MHz (television channels 2-4) and 76-88 MHz (television channels 5 and 6), the high VHF spectrum at 174-216 MHz (television channels 7-13), and the UHF bands at 470-608 MHz (television channels 14-36) and 614-698 MHz (channels 38-51).

Utilizing broadcasters' current spectrum allocations, broadcasters and manufacturers are in the process of rolling-out a number of new services and applications that will take advantage of broadcasters' digital capabilities and lay the groundwork for future innovation. New services and applications, such as Mobile DTV and non-real time filed based services, will provide broadcasters with new innovative and competitive ways for American's to receive free, local content. However, in order for these new services and applications to be realized the Commission should not implement rules that inhibit broadcasters' current capabilities or prevent further technological innovation within the broadcast industry.

Harris Corporation is an international communications and information technology company serving government and commercial markets in more than 150 countries. Harris Broadcast Communications, a division of Harris, is headquartered in Denver, Colorado, and operates the world's largest transmitter factory in Quincy, Illinois. Harris Broadcast Communications also maintains research centers in Mason, Ohio, Vista, California, Northridge, California, Ridgewater, New Jersey, and Pottdam, Pennsylvania. As the world's leading broadcast transmission equipment supplier, Harris is the leader in digital solutions for television and radio broadcasting. Harris Broadcast Communications has been at the forefront of the transition to digital television, supplying the majority of the digital television transmitters and encoders in the United States. Harris is committed to facilitating technological advancement within the broadcast industry and focused on helping customers succeed in the business of digital media. Harris Broadcast Communications is an active member of industry and standard setting organizations including the Advanced Television Systems Committee ("ATSC") National Association of Broadcasters ("NAB"), and Open Mobile Video Coalition ("OMVC").

I. ANY PROPOSALS TO REPURPOSE BROADCAST SPECTRUM SHOULD BE DONE ON A VOLUNTARY BASIS AND ANY EFFORTS TO REPACK SPECTRUM SHOULD NOT INFLICT UNDUE BURDENS ON BROADCAST OPERATIONS.

While adding flexibility in the Table of Allocations, implementing rules to enable channel sharing, and improving service for television viewers in the VHF bands could provide valuable flexibility and efficiencies in the broadcast band, these proposals should not be implemented at the detriment of broadcasters' existing or future operations. In implementing all three proposals the Commission should strive to do no harm to broadcasters' current and future operations. In response to the Commission's three primary proposals in the NPRM, Harris makes the following recommendations:

1. Spectrum Allocations

Before adopting rules for allowing additional co-primary allotments in the U/V Bands the Commission should release its Allotment Optimization Model and seek comment on the model's structure. While Harris believes that additional fixed and wireless allocations may be possible in the U/V bands, adopting such allocations at this time is premature without fully understanding what spectrum within the U/V Band, within specific geographic regions, will be reallocated. Current broadcast frequency allocations are for geographically fixed locations that are carefully coordinated to avoid interference between users. Allowing mobile services to share this spectrum requires additional technology and frequency coordination to prevent mobile devices from causing interference to nearby fixed users.

2. Broadcast Television Channel Sharing

Any channel sharing paradigm must be implemented on a voluntary basis and should provide the maximum amount of flexibility to broadcasters in order to allow them to maintain their current level of service and be able to adopt new service offerings, such as Mobile DTV and non-real time file based services. Furthermore, broadcasters' current coverage should not be impacted as a result of channel sharing. As proposed in the NPRM, the Commission should allow sharing stations to deploy on-channel digital transmission systems to help counteract any potential coverage loss. The Commission should continue to treat stations that choose to share a channel as discrete stations with the same rights (must carry) and obligations (public service) as if they had their own transmission facility. Ultimately, the decision whether two stations should share a single 6 MHz channel must be left to broadcasters, based on their own evaluation of the marketplace.

3. Improving Reception of VHF Television Service

Harris supports the proposals set forth in the NPRM to reduce reception issues in the VHF band, including increasing the signal-to-noise ratio by raising the transmitted power for certain VHF stations and establishing standards for indoor antennas to improve the reception of low-VHF channels. To improve VHF television service the Commission must also take proactive steps to better understand the increasing noise levels as a result of new technology. Harris recommends that the Commission conduct a study to better understand how

modern technology and appliances are impacting noise levels and use that study as a basis for reexamining established noise ratios and noise limits.

Modifying antenna requirements will also be vital to improving reception of VHF television channels. Harris supports the Commission's recommendations provide instructions to consumers on how maximize their reception. Notifications on how to install and use VHF antennas can be provided in manufacturer packaging and through a website established by the Commission. In addition, Harris strongly urges the Commission to consider the implementation of antenna requirements, as proposed in the NPRM.

While improving VHF reception is important to maximizing the spectral efficiency of the band, VHF spectrum still presents transmission and reception problems that make it difficult for broadcaster use of the band for new technologies, especially Mobile DTV. Harris does not support requiring broadcasters to move from the UHF to the VHF band as a part of any forced relocation plan. Harris is supportive of Chairman Genachowski's recent comments supporting this position.[3]

Harris firmly believes that broadcast television is a vital part of America's broadband solution. Current broadcast spectrum allocations do not run counter to the Commission's efforts to expand comprehensive broadband capabilities nationwide. Broadcasters' service is unique compared to any other modern telecommunications service, not only because it is free, but also

[3] "Plus, we would propose that stations not be forced to move from the UHF band to the VHF band; rather, any such moves would be purely voluntary -- indeed, we have suggested that stations willing to do so could participate in the auction and put a price on a UHF to VHF move." Statement of Julius Genachowski, Chairman, Federal Communications Commission, Remarks on Broadband: "The Clock is Ticking," Mobile Broadband Forum, Washington D.C. (Mar. 16, 2010) *available at* http://www.fcc.gov/Daily_Releases/Daily_Business/2011/db0316/DOC-305225A1.pdf.

because of its nationwide footprint, one-to-many delivery method, highly reliable infrastructure, and public interest obligations. Broadcasters' resources, both physical and spectral, should be viewed as an asset, not an obstacle, to advancing the Commission broadband goals. The Commission must establish rules and provide adequate spectral resources that will enable broadcasters to compete in a wireless broadband ecosystem.

II. BROADCASTERS' INFRASTRUCTURE HAS UNIQUE BENEFITS THAT THE COMMISSION SHOULD BE ATTEMPTING TO LEVERAGE, NOT DISMANTLE.

Access to broadband and broadcast is not a mutually exclusive proposition. Both broadband and broadcast can simultaneously prosper. The Commission should aim to leverage broadcasters' unique capabilities in order to enhance consumer broadband offerings. Choosing one service over the other "would not only be contrary to legislative intent, but it would be contrary to the public interest as well."[4] Broadcastings ability to serve one-to-many is unique across all communications services. The Commission should take advantage of the pervasiveness of broadcasting and encourage broadcasters to be a part of the broadband solution by continuing to provide them with the necessary spectral resources to innovate.

A. Over-the-Air Broadcasting Provides Reliable Infrastructure that is Critical in Times of Emergency.

While on a day-to-day basis Americans may take the capabilities of broadcasting for granted, the power of broadcastings reliable, redundant, and resilient infrastructure is most apparent during emergencies. Most broadcasters maintain transmission sites that have independent electrical generation and programming capabilities, making them much less vulnerable to the collapse of traditional telecommunications and electrical power infrastructure. Many broadcasters also maintain geographically separated backup transmission sites with

[4] Reply Comments of the Association for Maximum Service Television and National Association of Broadcasters, In the Matter of a National Broadband Plan For Our Future, Public Notice Number 6, GN Docket Nos. 09-47, 09-137, 09-51, pg. 3 (filed Nov. 13, 2009).

independent infrastructure from the primary site. This is why radio and television broadcasters, in times of disaster, have always been able to provide news and emergency information to the general population when all other telecommunications systems are out of service due to failure or congestion.

Hurricane Katrina served as a stark reminder of the fragility of America's communications infrastructure. Many wireless and wired telecommunications networks were either significantly damaged or completely failed during the storm. Those networks that did stay up during the storm frequently became overloaded and failed to meet the needs of both the public and first responders. Hurricane Katrina exposed many of the shortcomings within the country's telecommunications infrastructure. Although many broadcast stations suffered damage during Hurricane Katrina, broadcasters' ability to keep the public informed during and after the storm demonstrated the resiliency and reliability of the broadcasting model. The very nature of broadcasting eliminates problems frequently faced by telecommunications providers, such as network "overloading" and "congestion."

During Hurricane Katrina broadcast stations were able to pool resources and leverage their own infrastructure to keep the public informed.[5] For example, Belo owned WWL-TV in New Orleans, Louisiana, was able to remain on the air both during and after Hurricane Katrina. In fact, WWL-TV's signal was able to be carried statewide in Louisiana and Mississippi through a network of digital broadcasting channels, public television stations, and live video streaming on its Website.[6] WWL-TV was able to leverage both broadcast and broadband infrastructure to

[5] Comments of the National Association of Broadcasters, In the Matter of Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, EB Docket No. 06-119, pg. 7 (filed Aug. 7, 2009).

[6] *See WWL Continues Coverage Despite Katrina's Devastation*, Broadcast Engineering (Sept. 8, 2009) *available at* http://broadcastengineering.com/newsrooms/Wwl-site-katrina-20050909/index.html.

keep the public informed. Likewise, while sustaining serious damage from Hurricane Katrina, WLOX in Biloxi, Mississippi, was able to remain on-air following the disaster on back-up power.[7]

The tragic events that have recently transpired in Japan also serve as a reminder of both the public interest and infrastructure benefits provided by broadcasters. The earthquake, followed by a tsunami, resulted in catastrophic damage to Japan's telecommunications infrastructure. Despite "down" or "overloaded" telecommunication networks, the national broadcaster NHK has provided non-stop coverage throughout the disaster. NHK has played a critical role by providing information across Japan, including updating survivors of the disaster on the growing crisis at several Japanese nuclear power plant. As reported on-line by Chester Dawson of the Wall Street Journal:

> Unable to use cell phones, many used their smartphones to tune into television broadcasts and find out what had happened. "It's very convenient being able to watch live TV when the phones are down," said Minori Naito, an employee of Royal Bank of Scotland, in Tokyo. "Otherwise, we'd have no idea what is going on."[8]

Over-the-air broadcast television, particularly through the use of Japan's mobile television service, has played a critical role in providing important information and warnings to the public.

B. Broadcasters are Uniquely Positioned to Offer Innovative Services, Such as Mobile DTV, By Utilizing Their Existing Infrastructure.

The ability to deliver video to mobile devices is ultimately tied to a services infrastructure. Broadcasters' infrastructure is particularly well suited to support mobile video.

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[7] *See Stations Grapple with Aftermath of Katrina; NAB Solicits Help,* Broadcast Engineering (Sept. 2, 2005) *available at* http://broadcastengineering.com/RF/WLOX-Biloxi-MS-Mississippi-20050902/index.html.

[8] Posting of Chester Dawson, Senior Report, *Wall Street Journal* to http://blogs.wsj.com/japanrealtime/2011/03/11/live-blog-japan-earthquake/tab/liveblog/ (Mar. 11, 2011, 8:06 EST).

The hallmark of the broadcast model is that it supports an unlimited number of viewers, typically within a large coverage area, from a single or small number of high power transmitter sites. As highlighted by NAB President and CEO, Senator Gordon Smith, broadcasters represent one of the most economically and spectrally efficient users of spectrum:

> Broadcasters generate tremendous efficiencies through their ability to serve "one-to-many" in small bandwidth segments—efficiencies that cannot otherwise be achieved. Indeed, with each additional viewer, a broadcaster's use of spectrum becomes more efficient, because increasing the number of viewers places no additional incremental burden on the spectrum. Moreover, unlike many mobile services, each television station transmits over its entire spectrum allotment during all or virtually all of the day; there are not peaks and valleys in transmission during which spectrum is unutilized or underutilized.[9]

In contrast, most wireless telecommunications networks are designed with a large number of low-power transmitters, or cells, interwoven to create a coverage area for a city, region or country. Wireless telecommunications providers require a dedicated connection (unicast) for each user in order to transmit a user's side of the conversation back to the tower. Unlike broadcasting, the more users on a wireless or wired telecommunications network, the greater the burden that is placed on that networks spectrum and capacity.

Today data, in particular video, is placing an unprecedented strain on telecommunications networks.[10] According to CTIA, "watching a YouTube video on a wireless device consumes almost on hundred times the data bandwidth of a voice

[9] Statement Senator Gordon Smith, CEO and President, National Association of Broadcasters, Before the United States House of Representatives Committee on Energy and Commerce, Subcommittee on Communications, Technology and the Internet, Hearing on "Spectrum Inventory and Relocation" (Dec. 15, 2009) *available at* http://democrats.energycommerce.house.gov/Press_111/20091215/smith_testimony.pdf.

[10] "Because mobile video content has much higher bit rates than other mobile content types, mobile video will generate much of the mobile traffic growth through 2015. Of the 6.3 exabytes per month crossing the mobile network by 2015, 4.2 exabytes will be due to video." Cisco Visual Network Index: global Mobile Data Traffic Forecast Update, 2010-2015, White Paper , pg. 8 (Feb. 1, 2011) *available at* http://newsroom.cisco.com/dlls/ekits/Cisco_VNI_Global_Mobile_Data_Traffic_Forecast_2010_2015.pdf ("Cisco Data Study").

conversation…."[11] The demand for mobile content continues to grow, especially as smart phones and tablets continue to penetrate the marketplace. According to a study by Cisco on the anticipated growth of mobile data "mobile video has the highest growth rate of any application category measured within the Cisco VNI forecast at this time."[12] Between 2010 and 2015 mobile data traffic supporting video is expected to more than double every two years. By 2011, 52.8 percent of data traffic will consist of mobile video[13] and by 2015 two thirds of the world's mobile data traffic will be video.[14] This dramatic growth of data services, especially video, will make current wireless telecommunications spectrum allocations insufficient to meet users anticipated network needs.[15] Cisco's study confirms this conclusion:

> The shift towards unicast from broadcast video will affect mobile networks as much as it will affect fixed networks. Internet radio and Internet video are unicast, meaning that there is one data stream per user, unlike broadcast, where one stream serves many users. The shift from broadcast to unicast means that traffic can increase dramatically even while the total amount of time spent watching video remains relatively constant.[16]

There is no amount of spectrum that can be provided to wireless carriers that will allow them to meet the demand for mobile video utilizing a unicast wireless system. Fortunately, broadcasters can offer telecommunications providers a reprieve from growing network congestion, capacity constraints, and spectrum scarcity concerns.

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[11] Comments of CTIA, In the Matter of a National Broadband Plan For Our Future, Public Notice Number 6, GN Docket Nos. 09-47, 09-137, 09-51, p. 9 (filed Oct. 23, 2009) ("CTIA NBP Comments")

[12] Cisco Data Study, *supra* note 10, at pg. 2.

[13] Id. at pg. 1.

[14] Id. at pg. 2.

[15] CTIA NBP Comments, *supra* note 14, at pgs. 10-13.

[16] Cisco Data Study, *supra* note 14 at pg. 8.

Broadcasters, utilizing their existing spectrum allocations, have the ability to deliver mobile, non-real-time and real-time, rich, high bandwidth, media steams, leaving bidirectional, low bandwidth interactivity to the wireless and wired telecommunications providers. This hybrid approach will allow mobile users to still obtain rich mobile video content, through services such as Mobile DTV, while telecommunications providers are able to provide consumers with bi-directional interactivity and preserve significant spectrum, bandwidth, and network capacity.

III. BROADCASTERS MUST BE PROVIDED SUFFICIENT SPECTRUM TO INNOVATE, COMPETE, AND SERVE THE PUBLIC INTEREST.

The Commission must look at broadcasters through the same lens it is viewing the wireless industry. Just as wireless providers may require additional spectrum allocations to continue to innovate in the future, broadcasters also need sufficient spectral resources to continue to innovate in the future. Today, a single television broadcast channel consists of six megahertz, which supports a bit rate of 19.4 megabytes per second ("mbps"). While a single Standard Definition ("SD") or in most cases HD stream does not require all six megahertz of broadcasters' spectrum, in order to provide the types of enhanced services envisioned by Congress and the Commission, all six megahertz are necessary. On average, an HD channel stream uses between 10 mbps and 16 mbps; a SD channel stream uses between 3 mbps and six mbps; a mobile DTV stream uses 2.75 mbps, but can range from 1 mbps to 14 mbps depending upon the number of mobile streams being transmitted; and non real-time delivery applications can range from 500 kbps to three mbps.

While the flexibility of the ATSC family of standards allows a television broadcast station to deliver an individual HD stream, a combination of HD and SD/Mobile DTV streams, or a combination of SD and Mobile DTV streams, these combinations can quickly use up

broadcasters' current six megahertz of spectrum. Supported by companies such as Harris, broadcasters have made monumental strides in increasing broadcast spectrum efficiency over the past ten to fifteen years. While broadcasters and equipment manufacturers will continue to work together to increase spectral efficiency, current spectrum allocations are necessary for broadcasters to provide existing services and enable the type of enhanced digital broadcast services desired by consumers.

With the digital transition taking place just over 21 months ago, broadcasters and manufacturers still are in the process of rolling-out new digital services and applications. Harris believes that broadcasters should be afforded the same amount of time to deploy new digital television services and applications as wireless providers have been provided to deploy new 700 MHz wireless offerings. Since the completion of Auction 73, it has taken wireless commercial carriers three years (and counting) to begin the process of deploying new 4G and WiMax services. Most nationwide deployments are expected to be ongoing throughout 2011 and into 2012 (and likely beyond). In order for broadcasters to reap the complete benefits of the digital television transition they should be provided the same type of market certainty being provided to wireless providers in their 4G and WiMax deployments. While Harris supports providing broadcasters the voluntary option to give up all or a portion of their current broadcast spectrum for repurposing, no such process should be forced upon broadcasters. Prematurely reclaiming additional spectrum from broadcasters may inhibit current and future broadcast capabilities.

A. Mobile DTV is in the Midst of Nationwide Deployment

Consumers increasingly demand the content they want, delivered when they want it, on their favorite devices, in a location of their choosing. Mobile DTV provides broadcasters the opportunity to meet these consumer demands and expand the reach of the public benefits

provided by broadcasters. The ATSC Mobile DTV Standard provides broadcasters the ability to offer a number of new services to mobile devices including free over-the-air television, interactive services delivered in real-time, subscription-based television, and non real-time file based delivery services. Broadcasters nationwide are in the process of launching Mobile DTV services, as illustrated by the formation of various Mobile DTV joint ventures such as the Mobile500 Alliance and the Pearl Mobile DTV Company. To date, just 17 months after final adoption of the ATSC Mobile DTV Standard, there are approximately 70 stations that have deployed Mobile DTV platforms. That number is expected to climb to 200 station deployments by the end of calendar year 2011.

Over the past five years, Harris has played a leadership role in the development and deployment of Mobile DTV.[17] Harris has been involved in the development of Mobile DTV standards and technology including two years of work co-developing the physical layer of the standard with LG and Zenith, and two years working with the ATSC Technical Standards Group. Harris was a leading participant in the OMVC's independent demonstration of viability testing of the Mobile DTV Standard and assisted consumer electronics manufacturers in their mobile receiver product development process by providing test streams and signal generation equipment. Harris also supported the ATSC Mobile DTV "Model Station" program that put reference stations on the air in Seattle and Atlanta using the Harris® MPH™ platform[18] and the Washington D.C. OMVC Mobile DTV Consumer Showcase.

[17] For a description of the Harris® MHP™ platform and Harris Mobile DTV offerings including Harris transmission and encoding equipment visit: http://www.broadcast.harris.com/media/ATSCMobileDigitalTelevision_25-5573.pdf. (*Submitted as Attachment A*)

[18] For additional information on Harris' complete line of Mobile DTV equipment visit: http://www.broadcast.harris.com/productsandsolutions/TelevisionTransmission/MobileTelevisionSolutions.

Harris continues to remain involved in the development and advancement of Mobile DTV Standard. In March 2009, Harris and Roundbox, Inc.,[19] announced an OEM agreement to deliver a complete mobile broadcast solution for U.S. terrestrial DTV broadcasters.[20] Under this agreement, the Roundbox Broadcast Server will be integrated into the Harris ATSC Mobile DTV broadcast system, enabling the first feature-rich mobile DTV solution available for immediate commercial deployment. The Harris-Roundbox solution provides a platform for delivering non real time services to mobile DTV-compliant devices allowing broadcasters to extend television's reach to mobile devices and expand their portfolio of services beyond linear television to include data, text and video clips. Harris continues to work with its industry partners, such as Roudnbox, to drive new Mobile DTV applications in the broadcast marketplace.[21] Approximately 50 television stations in the United States and Canada are now on-the-air with commercial deployments of the Harris® MPH™ platform.

Innovative offerings, such as Mobile DTV, will not only provide broadcasters with enhanced communication abilities—allowing them to more effectively relay information to their local community, such as emergency alerts and AMBER alerts—but will also provide citizens with increased access to local news, weather, traffic, and information of local importance. Digital broadcasting has provided broadcasters with the

[19] Roundbox is the leading provider of mobile broadcast software for broadcasters, mobile operators, and device manufacturers. Roundbox's award-winning product suite empowers its customers to deliver innovative mobile broadcast applications, enabling them to increase revenue, enhance competitive differentiation, and improve the user experience. For more information, visit www.roudnbox.com.

[20] *Harris Corporation and Roudnbox Announce OEM Agreement to Deliver First Mobile DTV Broadcast Solution*, Press Release (Mar. 17, 2009) *available at*: http://www.harris.com/view_pressrelease.asp?act=lookup&pr_id=2648.

[21] *See Introducing Mobile DTV: Driving the Convergence of the Mobile and Broadcast Industries*, Roundbox, Inc., *available at* http://www.broadcast.harris.com/media/IntroducingMobileDTV%20_25-14775.pdf (examining the marketplace opportunities to broadcasters and benefits to consumers provided through Mobile DTV services)(*Submitted as Attachment B*); *See also* Mobile DTV Widgets: Push Mobile DTV Beyond TV, Roundbox, Inc., *available at* http://www.broadcast.harris.com/media/MobileDTVWidgets_25-14776.pdf (discussing the use of Mobile DTV Widgets to enable broadcast distribution of a wide range of data services to mobile consumers) (*Submitted as Attachment C*).

unique opportunity to expand the scope of their service and provide additional public interest benefits. However, the country will only be able to realize these benefits if broadcasters are provided the spectral resources to launch new broadcast offerings, such as Mobile DTV, and use those new services as a basis for continued growth and innovation.

IV. CONCLUSION

For the foregoing reasons, Harris respectfully requests that the Commission commit to doing no harm to broadcasters' current and future operations as part of efforts to provide flexibility in the U/V Bands. In particular, any channel sharing opportunities should be strictly on a voluntary basis. Furthermore, while steps should be taken to increase VHF band reception, broadcasters should not be involuntarily relegated to VHF spectrum bands. Harris believes that leveraging broadcasters' capabilities and infrastructure with those of other telecommunications services—both wired and wireless—is vital to accomplishing the broadband adoption and deployment goals set forth by the Commission in the National Broadband Plan. The Commission should view broadcasters as a part of the country's broadband solution by continuing to ensure that broadcasters have the necessary spectral resources to innovate. Harris stands ready to work with the Commission, the broadcast industry, and telecommunications providers to present innovative ideas that leverage broadcasters' existing infrastructure and enhance America's broadband capabilities.

Respectfully submitted,

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